

WHAT IS CLAIMED IS:

1. A noise eliminator for eliminating noise contained in an input signal, comprising:

5 a holding unit for detecting a period of occurrence of noise contained in said input signal, passing said input signal for output during a period when no noise occurs, and putting said input signal into a hold state for output during the period of occurrence of noise;

10 a synthetic unit for synthesizing a hold signal component of the signal output from said holding unit with an interpolation amount, said hold signal component being output in said hold state;

a predictor for performing a predictive operation on output signals of said synthetic unit to calculate predictive values  
15 approximate to said input signal; and

an interpolation control unit for determining an amount of change of said predictive values as said interpolation amount, and stopping said synthetic unit from performing the synthesis of said interpolation amount when said predictive values are inappropriate  
20 with respect to said hold signal component output in said hold state, and making said synthetic unit perform the synthesis of said interpolation amount when said predictive values are appropriate.

2. The noise eliminator according to claim 1, wherein

25 said interpolation control unit determines, as the amount of change, a difference between said predictive value generated at the starting point of the period of occurrence of noise and each

individual predictive value generated within the period of occurrence of noise.

3. The noise eliminator according to claim 1, wherein

5       said interpolation control unit determines an absolute value of said difference between said each predictive value determined within the period of occurrence of noise and said hold signal component output in said hold state and an absolute value of said hold signal component, and regards said predictive value as inappropriate with  
10       respect to said hold signal component when the absolute value of said difference is greatly different from the absolute value of said hold signal component.

4. The noise eliminator according to claim 1, wherein

15       said interpolation control unit determines an absolute value of said difference between said each predictive value determined within the period of occurrence of noise and said hold signal component output in said hold state and an absolute value of said hold signal component, and regards said predictive value as appropriate when  
20       the absolute value of said difference is little different from the absolute value of said hold signal component.

5. The noise eliminator according to claim 3, wherein

      said interpolation control unit further determines a maximum  
25       value of the absolute values of said differences within a predetermined period and a maximum value of the absolute values of said hold signal component within said predetermined period as

a first maximum value and a second maximum value, respectively, and regards said predictive values as inappropriate with respect to said hold signal component when said first maximum value is larger than said second maximum value.

5

6. The noise eliminator according to claim 4, wherein said interpolation control unit further determines a maximum value of the absolute values of said differences within a predetermined period and a maximum value of the absolute values of said hold signal component within said predetermined period as a first maximum value and a second maximum value, respectively, and regards said predictive values as appropriate when said first maximum value is smaller than or equal to said second maximum value.

10

15 7. The noise eliminator according to claim 1, wherein said input signal is an FM detection signal.

8. The noise eliminator according to claim 7, wherein said predictor performs a predictive operation for approximating one of a pilot signal and a sub carrier contained in said FM detection signal.

20

9. The noise eliminator according to claim 8, wherein said predictor determines a difference between two of said output signals to calculate said predictive value, said two output signals having a phase difference corresponding to the frequency of said pilot signal or said sub carrier.

25

10. A noise elimination method for eliminating noise contained in an input signal, comprising:

a holding step of detecting a period of occurrence of noise contained in said input signal, passing said input signal for output during a period when no noise occurs, and putting said input signal into a hold state for output during the period of occurrence of noise;

a synthetic step of synthesizing a hold signal component of the signal output in the holding step with an interpolation amount, said hold signal component being output in said hold state;

a predictive step of performing a predictive operation on output signals generated in the synthetic step to calculate predictive values approximate to said input signal; and

an interpolation control step of determining an amount of change of said predictive values as said interpolation amount, and stopping the synthesis of said interpolation amount in the synthetic step when said predictive values are inappropriate with respect to said hold signal component output in said hold state, and enabling the synthesis of said interpolation amount in the synthetic step when said predictive values are appropriate.